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Nebraska Monthly Economic Indicators: May 20, 2016

Eric Thompson

University of Nebraska-Lincoln, ethompson2@unl.edu

William Walstad

University of Nebraska-Lincoln, wwalstad1@unl.edu

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Nebraska Monthly Economic Indicators: May 20, 2016

Prepared by the UNL College of Business Administration, Department of Economics

Authors: Dr. Eric Thompson, Dr. William Walstad

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Summary: The Leading Economic Indicator – Nebraska (LEI-N) rose by 1.21% in April 2016. The LEI-N, which predicts economic growth in the state six months in the future, rose even faster during the month of March. These two sharp increases indicate that economic growth will be strong in Nebraska during the second half of 2016. Three of the six components of the LEI-N improved during April. Business expectations were strong, as respondents to the April Survey of Nebraska Business predicted rapid growth in sales and employment over the next 6 months. In addition, for the third consecutive month, there was a drop in the value of the U.S. dollar during April. This supports export-oriented businesses in Nebraska. There also was a drop in initial claims for unemployment insurance, a positive sign for the labor market.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in April 2016 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.21% during April.

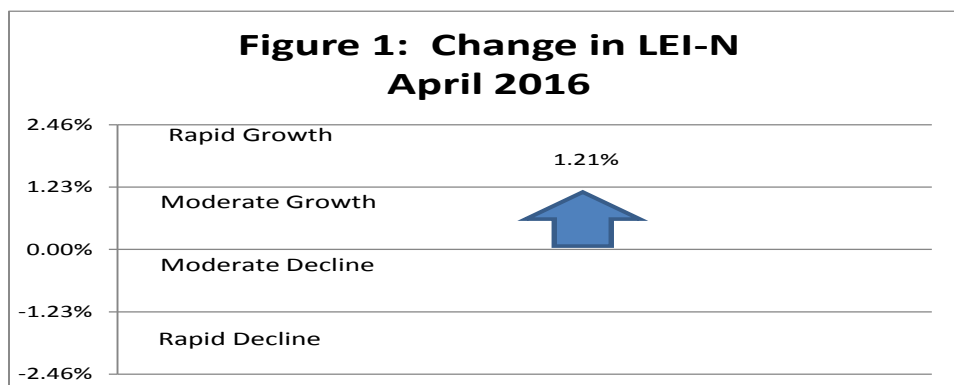


Figure 2 shows the change in the LEI-N over the last six months. The figure shows that there has been a sharp increase in the LEI-N during three of the last four months. This portends strong growth in the Nebraska economy during the second half of 2016.

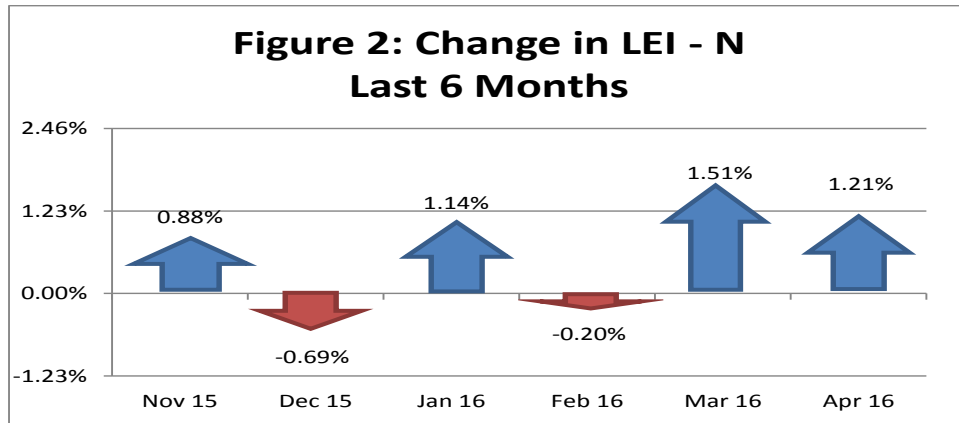
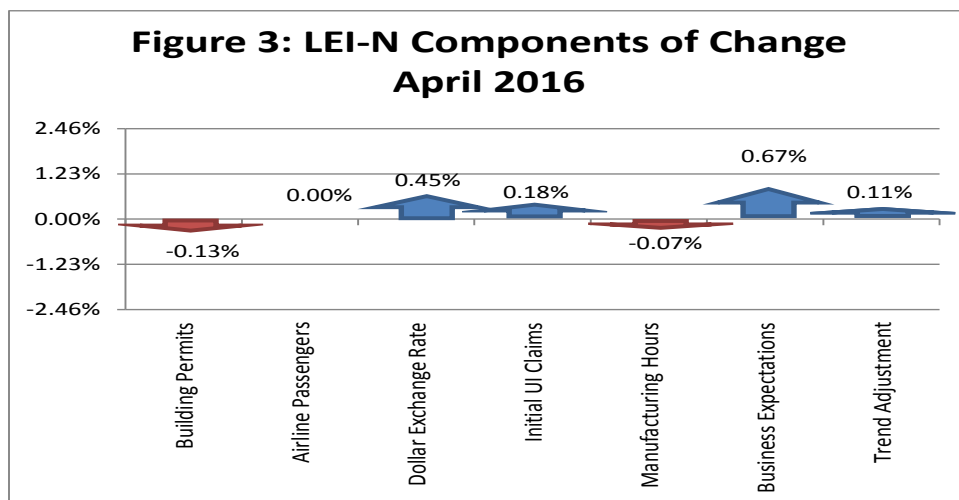
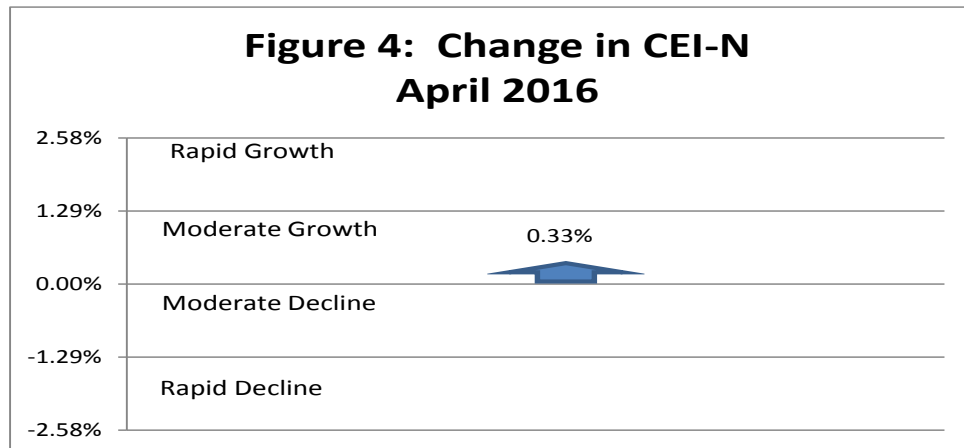


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during April 2016. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Looking at individual components, business expectations were especially strong. Respondents to the April *Survey of Nebraska Business* predicted strong growth in both sales and employment at their businesses over the next six months. Further, for the third consecutive month, there was a drop in the value of the U.S. dollar during April, which is positive for Nebraska’s export-oriented businesses in manufacturing and agriculture. There also was a drop in initial claims for unemployment insurance during April, a positive sign for the labor market. There was no change in airline passenger counts and a modest decline in manufacturing hours during April. There also was a decline in building permits on a seasonally-adjusted basis. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

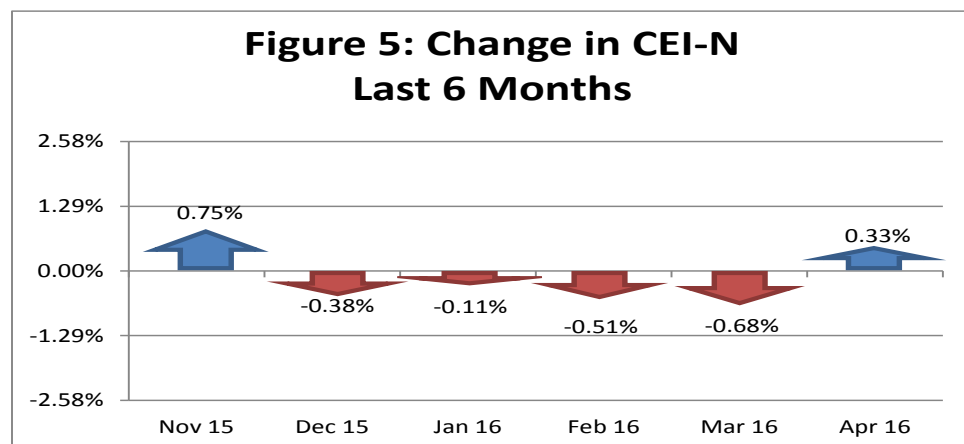


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.33% during April, as seen in Figure 4.



As seen in Figure 5, the CEI-N declined each month during the December through March period. Those decline indicate that the Nebraska economy was weak during the first quarter of 2016. The increase during April suggests that the economy may improve for the remainder of the year. Naturally, it will be critical to monitor whether the growth in the CEI-N during April continues in subsequent months.



As seen in Figure 6, three of four components of the CEI-N rose during April. Business conditions were positive, as measured in the *April Survey of Nebraska Business*. Responding businesses reported a recent increase in sales and employment. Real private wages also rose during April, reflecting an increase in employment, weekly hours and real hourly wages. Finally, electricity sales rose during the month after adjusting for weather and seasonal factors. Agricultural commodity prices, however, declined during April due to a drop in beef prices. A detailed discussion of the components of the CEI-N and LEI-N can be found at www.cba.unl.edu in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

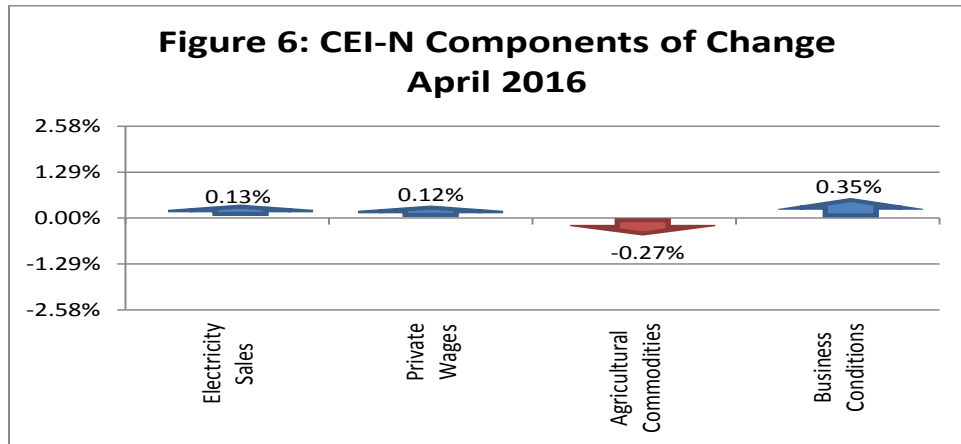
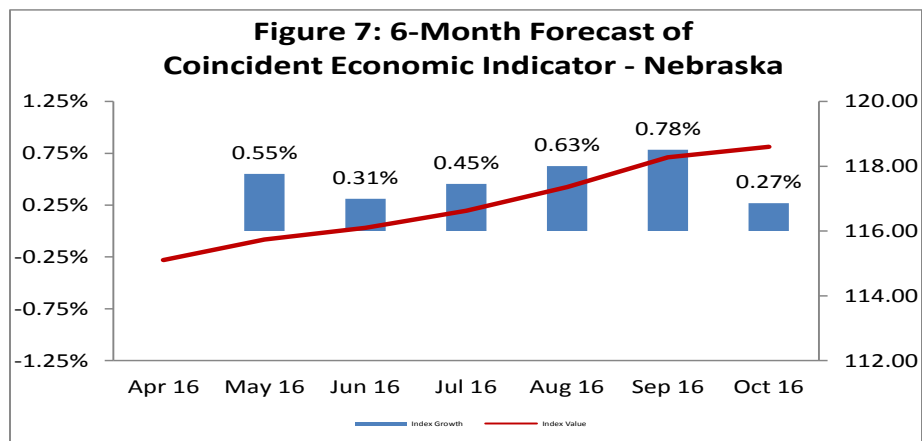


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for strong economic growth in Nebraska. This outlook is consistent with recent values for the LEI-N, which have risen sharply in three of the last four months (see Figure 2).



Weights and Component Shares

Table 1 shows the weights used to aggregate the individual components into the LEI-N and CEI-N. The weights are the inverse of the “standardized” standard deviation of each component variable. The term standardized simply means that the inverse standard deviations are adjusted proportionately to sum to 1. This weighting scheme makes sense since individual components that are more stable have smaller standard deviations, and therefore, a larger inverse standard deviation. A large movement in a typically stable economic series would provide a more powerful signal of economic change than a large movement in a series that regularly has large movements.

Table 1: Component Weights for LEI-N and CEI-N							
Leading Economic Indicator - Nebraska				Coincident Economic Indicator - Nebraska			
Variable	Standard Deviation	Inverse STD	Weight (Inverse STD Standardize)	Variable	Standard Deviation	Inverse STD	Weight (Inverse STD Standardize)
SF Housing Permits	13.5173	0.0740	0.0347	Electricity Sales	4.7105	0.2123	0.1549
Airline Passengers	3.3679	0.2969	0.1391	Private Wages	1.6952	0.5899	0.4304
Exchange Rate	1.2160	0.8223	0.3852	Agricultural Commodities	3.2506	0.3076	0.2244
Initial UI Claims	10.1140	0.0989	0.0463	Survey Business Conditions	3.8327	0.2609	0.1903
Manufacturing Hours	1.6310	0.6131	0.2872				
Survey Business Expectations	4.3567	0.2295	0.1075				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between March and April of 2016. Weights (from Table 1) are multiplied by the change to calculate the contribution of each component. Contributions are converted to percentage terms and summed. Note that in Table 2 a trend adjustment factor is utilized in calculating LEI-N. This is done because LEI-N historically under-predicts CEI-N by 0.11% per month. The U.S. Leading Economic Indicator also has a trend adjustment.

Table 2: Component Contributions to the Change in Leading Economic Indicator						
Leading Economic Indicator - Nebraska						
Component Index Value (May 2007=100)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous LEI-N)
SF Building Permits	69.05	73.60	-4.55	0.03	-0.16	-0.13%
Airline Passengers	95.16	95.14	0.02	0.14	0.00	0.00%
U.S. Dollar Exchange Rate (Inverse)	87.46	86.05	1.41	0.39	0.55	0.45%
Initial Unemployment Insurance Claims (Inverse)	136.18	131.46	4.72	0.05	0.22	0.18%
Manufacturing Hours	96.98	97.27	-0.30	0.29	-0.08	-0.07%
Survey Business Expectations ¹	57.66		7.66	0.11	0.82	0.67%
Trend Adjustment					0.13	0.11%
Total (weighted average)	123.65	122.17			1.48	1.21%

¹ Survey results are a diffusion Index, which is always compared to 50

Table 3: Component Contributions to the Change in Coincident Economic Indicator						
Coincident Economic Indicator - Nebraska						
Component Index Value (May 2007=100)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous CEI-N)
Electricity Sales	142.04	141.08	0.96	0.15	0.15	0.13%
Private Wage	105.01	104.68	0.33	0.43	0.14	0.12%
Agricultural Commodities	127.10	128.50	-1.40	0.22	-0.31	-0.27%
Survey Business Conditions ¹	52.13		2.13	0.19	0.40	0.35%
Total (weighted average)	115.10	114.72			0.38	0.33%

¹ Survey results are a diffusion Index, which is always compared to 50

Performance of the LEI-N and CEI-N

Further information is available on both economic indicators to demonstrate how well the CEI-N tracks the Nebraska economy and how well the LEI-N leads the CEI-N. Figure 8 shows the value of CEI-N and the real gross state product (real GDP) in Nebraska for 2001 through 2012. The comparison ends in 2012 since this is the last year for which data on real gross state product is available. Annual real gross state product data is provided by the Bureau of Economic Analysis, U.S. Department of Commerce, and quarterly values were estimated using quarterly earnings data. CEI-N closely tracks Nebraska real GDP for the period. The correlation coefficient between the two pictured series is 0.96.

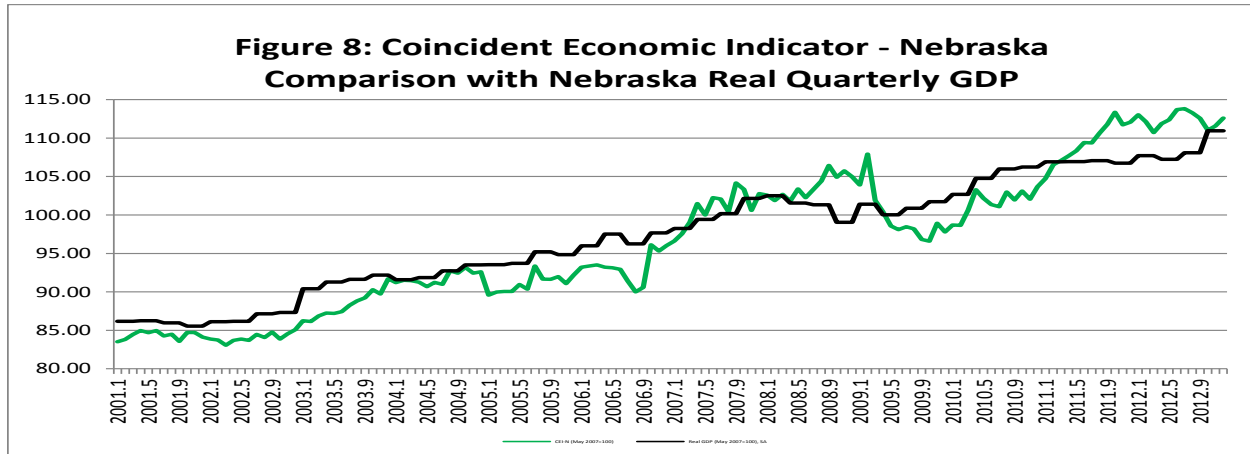


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months earlier) with the actual movement in CEI-N. In Figure 9, predicted values using the LEI-N closely track trends and movement in the CEI-N. The correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.92.

